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EXAMINER
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**Technology Center 2600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 13

Application Number: 08/880,648  
Filing Date: 6/23/97  
Appellant(s): Gregory S Mendolia

Elaine Papavasiliou  
For Appellant

**EXAMINER'S ANSWER**

This is in response to appellant's brief on appeal filed 11-16-2000.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

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A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The rejection of claims 1-10 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

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5,832,079

Rabe

11-1998

5,915,015

Thornton

6-1999

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabe (of record) in view of Thornton, both of record.

Concerning claims 1, 2, 8 and 10,

Rabe discloses a flip style cellular phone comprising:

a main housing (12);

a flip (16), pivotally mounted to the main housing by hinges (16H and 16H@, see also column 2 line 63 - column 3 line 1), the flip having a free end remote from the hinges;

a microphone (32) mounted in the main housing; and

an acoustic pipe or channel (26) extending from the free end of the flip to the hinged end to carry sound from said free end to said hinged end, wherein said channel has a sound inlet (24) at the free end of the flip, and wherein said channel partly extends along one of the peripheral edges of the flip (see figure 2 and element 28). Said channel or pipe is in acoustic communication with said microphone (see abstract), transmitting sound from the inlet to the microphone.

Rabe does not, however, expressly disclose that the acoustic channel extends entirely along one of the peripheral edges of the flip.

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However, Rabe does disclose that the cavity can be made in "other shapes and types" (column 3 lines 44-47), including but not limited to conic section-shaped cavities. Thornton discloses the utility of providing a triangular shaped acoustic pipe in a flip member of a portable phone (col 2 lines 20-39, col 3 line 63-col 4 line 28), which, as shown in figure 2, adjacent to the peripheral edge of the flip. While the cavity of Thornton does not extend completely along the edge of the flip, absent any critical teaching other than an aesthetic appearance as to the purpose of disposing the acoustic pipe on the periphery of the flip, as taught in applicant's specification, page 2 lines 6-11, there is no functional distinction between a cavity such as that taught by Thornton and one in which the outer edge of the cavity is disposed along a peripheral edge of the flip. As such, it would have been obvious to one skilled in the art at the time the invention was made to incorporate such a cavity shape, as taught by Thornton, into Rabe, and to further modify the acoustic pipe such that the cavity is disposed entirely along the peripheral edge of the flip, given the suggestion of cavities of "other shapes and types" by Rabe, as it would provide for the specific acoustic response needed by an invention such as that taught by Thornton; it is further noted that there must be an amount of flip material present between the flip edge and the cavity in order to maintain the integrity of the flip structure, and thus modifying the amount of material or distance from the flip edge to the cavity at one or both ends of the flip edge in such a manner would have been a routine engineering decision predicated on the specific acoustic response needed and the material used in the making of the flip.

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Regarding claims 3 and 11, Rabe discloses a hollow hinge (16H@) connecting the acoustic channel to the microphone (column 3 lines 31-35).

Concerning claim 4, Rabe discloses an acoustic pipe providing a single acoustic pathway from the free end to the hinged end of the flip (see figure 2).

Further regarding claims 5, 9 and 12, Rabe disclosed above that the acoustic channel can be of "other shapes and types" (column 3 lines 44-47), which could construe an acoustic channel occupying the entire inside volume of the flip. An acoustic channel which occupies the entire inside volume of the flip, for example, would extend along the entire peripheral edge of the flip, as taught by claims 5 and 12, and would further be formed in the peripheral edge of the flip as taught by claim 9 of the present invention. Such a shape can be construed as suggested by Rabe.

Regarding claim 6, Rabe disclosed above that said acoustic channel is in communication with said microphone.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bartha et al discusses an acoustic channel for a flip phone wherein the channel is composed of a right triangle-shaped cavity residing along a peripheral edge of the flip.

Frohlund discusses an acoustic cavity for a flip which is in the shape of a right triangle.

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**(11) Response to Argument**

**Regarding** appellant's first argument, stated on page 9 of the supplemental appeal brief, PTO paper number 12, lines 11-19,

the examiner has previously cited statements in *Rabe* which would fairly suggest the combination of the two references; as stated in the rejection of claim 1 in the last rejection, PTO paper number 11, *Rabe* teaches that the sound-carrying channel may comprise "other shapes and types", including but not limited to conic-sections (i.e. parabolic or hyperbolic types). See *Rabe* col 3 lines 44-47. *Rabe* further teaches that the shape of the acoustic pathway determines the acoustic response of said channel, see *Rabe* col 3 lines 19-31.

*Thornton* teaches a similar device, where a triangular-shaped acoustic pathway provides sound from a free end of a flip to a microphone inside the main body of the device. Note particularly FIG 2, where it is shown that the triangle-shaped cavity resides along the edge of one side of the flip, albeit at a small angle from the entire edge. Given the suggestion by *Rabe* to incorporate "other shapes and types" of pathways into the flip for a proper acoustic response, and the teaching by *Thornton* that a triangular shaped pathway similar to that taught in a preferred embodiment of *Rabe* is useful in such a device, the examiner asserts that the prior rejection showed proper findings and statements as to the suggestion, teaching or motivation necessary to combine the prior art references.

**Regarding** appellant's second argument, stated on page 9 line 20-page 10 line 5 of PTO paper number 12,

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the examiner stands behind the assertion that the modification of the triangular-shaped cavity taught by the combined invention of *Rabe* and *Thornton* would have been obvious; since the appellant states that *Thornton* teaches a right triangle shape (see brief page 10 lines 7-8) and since *Rabe* teaches how the shape of the cavity determines the acoustic response, and also that the flip can be made of “any of a number of...materials (col 4 lines 33-34)”, such materials possibly having differing acoustic impedance matching properties, such a shape would be an engineering decision predicated on the proper acoustic response, and in part what material is used. Further, since such a shape is so similar to the teachings of *Thornton*, it would not pose a detrimental experimental uncertainty to modify the channel in such a way.

**Regarding** appellant’s third argument, stated on page 10 of the brief, lines 6-11, the examiner disagrees with the appellant’s assertion that the combined and further modified invention of *Rabe* in view of *Thornton* does not teach the present invention. While the present invention teaches an acoustic pipe, as previously stated in PTO paper number 7, page 4, line 14-page 5 line 3, applicant’s specification states that an acoustic pipe is “a hollow sound carrying channel” and “a hollow conduit that leads from the free end of the flip to the hinged end...”, see specification page 2 lines 2-3 and page 3 lines 18-19. Although the modified invention of *Rabe* in view of *Thornton* does not disclose a pipe of circular cross section, like the preferred embodiment of applicant, applicant further defines an acoustic pipe as having “other cross-sectional shapes [that] are also possible as equivalents”, see specification page 4 lines 21-22, and thus broadens the interpretation of an ‘acoustic pipe.’



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Thus the phrase 'acoustic pipe' is read according to applicants definition, that is a hollow sound carrying channel of various cross-sectional types, that leads from the free end of the flip to the hinged end, which is met by the cavities of *Rabe* and *Thornton*. Further, it is restated that such a shape, i.e. a right triangle-shaped cavity would extend along the entire edge of the flip, as recited in applicant's claim 1.

**Regarding** appellant's fourth argument, stated on page 10 of the brief, lines 11-14, as stated above, a right triangle-shaped cavity would extend along the entire edge of the flip; note FIG 2 of *Thornton*, modified into a right triangle shape. The cavity would reside along the entire edge of the flip, save a certain minimum thickness of material at the very edge of the flip inherent in such a design. As to the purpose of such a placement i.e. maintaining a thin profile, such a statement of advantage is not present in the claims; further, the modification of *Rabe* in view of *Thornton* into a right triangle shaped cavity would not add thickness to the flip element, and would thus inherently maintain an already thin profile.

**Regarding** appellant's fifth argument, stated on page 10 of the brief, lines 15-22,

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

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time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Since the motivation to modify the acoustic channel is based on the needed acoustic response and materials used, the examiner believes the modification of *Rabe* is proper. A channel such as that shown in the rejection of e.g. claim 1 above would extend along the peripheral edge of the flip. Such a reconstruction of the present invention is based on the examiner's reading of the prior art; looking in from the acoustic channel, the channel would extend along an inside peripheral edge of the flip. Further, claim 1 does not specifically state that the acoustic pipe extends *as* the peripheral edge, as stated by the appellant to be the preferred embodiment of the invention. Indeed, any channel such as, for example, that taught by *Thornton* would, as stated previously, inherently have a given amount of material at the outside edge of the flip in order to provide structural integrity and prevent damage or rupture of the acoustic channel due to shock, and it is not recited that the channel would have to reside along the edge of the flip to within a given distance, that is, that the entire channel is provided a given, fixed distance from the outside edge of the flip. As such, it may be argued that the channel of *Thornton* resides along a peripheral edge of the flip, since a slight difference in distance of the channel from the outside edge at the distal end of the flip may still constitute the channel residing along the edge.

**Regarding** appellant's sixth argument, stated on page 11 of the brief, lines 1-7,

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while the examiner does not disagree with the appellant's assertion of the utility of a phone which is "thinner in profile and easier to transport", such advantages are not read in the claims. While the preferred embodiment of the present application may provide such a device, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Guens*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). While it is true that the present claimed invention may not have a functional advantage over *Rabe* or *Thornton*, it is not a functional advantage which is at issue, it is the equivalence of *Rabe* in view of *Thornton* to the claims of the present invention.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

cc  
Charles Craver  
Patent Examiner  
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